C. Remarks

The claims are 1-31, with claims 1, 26 and 28-31 being independent. Claims 1, 28 and 29 have been amended to better define the present invention and to improve their form. Support for this amendment may be found throughout the specification. Claims 16, 17 and 23 have been amended to improve their form. No new matter has been added. Reconsideration of the claims is expressly requested.

As required, Applicants affirm the provisional election of Group IIB, claims 28 and 29. However, Applicants again traverse the restriction requirement and respectfully submit that claims 1-25 of Group I should be rejoined and examined in this application.

Under M.P.E.P. § 803, the Examiner must provide reasons and/or examples to support a conclusion that a restriction requirement between the claims Groups I and IIB is proper. Applicants respectfully submit that no such reasons and/or examples are recited in the January 21, 2004 Office Action. Specifically, the Examiner merely provided reasons for a restriction requirement between method and apparatus claims. However, claims 1-25 of Group I and claims 28 and 29 of Group IIB are all method claims directed to the same subject matter. Furthermore, the Examiner stated that claims 26, 27, 30 and 31 are directed to the apparatus for practicing the method of Group I (claims 1-25) and Group IIB (claims 28 and 29). The search relating to Group I and Group IIB is believed to be co-extensive. In fact, claim 1 contains all the features of claims 28 and 29 and could be rewritten to depend from either of these claims without a change in scope. Therefore, it is clear that claims 1-25, 28 and 29 should be in the same group and should be examined together. A restriction requirement between these groups is improper and should be withdrawn.

The abstract is objected to by the Examiner for allegedly not being within the permitted range of 50-150 words. Applicants respectfully submit that the abstract contains about 135 words. Accordingly, this objection should be withdrawn.

Claim 28 stands rejected under 35 U.S.C. § 102(e) as being allegedly anticipated by U.S. Patent No. 6,558,639 B1 (Watanabe) or 6,180,014 (Salama). Claim 28 also stands rejected under 35 U.S.C. § 102(b) as being allegedly anticipated by U.S. Patent No. 6,136,203 (Butters). Claim 29 stands rejected 35 U.S.C. § 103(a) as being allegedly obvious from Salama or Butters. The grounds of rejection are respectfully traversed.

Prior to addressing the merits of rejection, Applicants would like to briefly review some of the key features and advantages of the presently claimed invention. The present invention is directed to a method for decomposing pollutants using a decomposition promoting substance and light irradiation. As recited in claim 28, the first step in the process is the initiation of the introduction of the decomposition promoting substance into the decomposition area. Then, the irradiation of the decomposition area with light is commenced. Subsequently, the introduction of the target substance into the decomposition area is started.

As a result of this specific order of steps, it is possible to quickly mix the decomposition promoting substance with the target substance, both of which have already been irradiated with light. Since the substances are in a gas phase at the time they are contacted with each other, uniform mixing can occur vary rapidly.

As recited in claim 29, the above-mentioned reaction steps are stopped in a sequence, which is reciprocal to the starting order. Specifically, first, the supply of the

target substance is stopped. Then, the light irradiation is terminated. Subsequently, the supply of the decomposition promoting substance is also stopped.

As a result of this specific order of terminating steps, it is possible to prevent the discharge of the undecomposed target substance and the mixed gases from the decomposition area. Any such discharge is undesirable and could be potentially harmful to biological organisms.

Watanabe is directed to an apparatus and a method for purifying fluids. Watanabe teaches that the polluted fluid is supplied through a photocatalytic pipe, the surface of which is covered with a film. The film is excited by ultraviolet radiation.

Clearly, Watanabe does not disclose or suggest a decomposition method in which a gaseous pollutant is contacted with a gaseous decomposition promoting substance. While the pollutant in Watanabe can be in a gas phase, the excited film used a catalyst is a solid. Therefore, the claimed gaseous mixture is not formed, and the present invention is clearly patentable over Watanabe.

Salama is directed to the method and device for generating ozone in-situ in order to remove pollutants from water. In Salama, polluted water is introduced into a tank wherein oxygen is generated by electrolysis, and then oxygen is converted into ozone by UV light. Ozone reacts with the pollutants in the water to carry out the decomposition.

Like Watanabe, Salama does not disclose or suggest a decomposition method in which a gaseous pollutant is mixed with a gaseous decomposition promoting substance. The pollutants in Salama are dissolved in water and are clearly not gaseous.

Furthermore, with respect to claim 28, Salama does not disclose or suggest the order of steps as presently claimed. Since water already contains pollutants prior to being introduced into the tank, and the decomposition promoting substance (ozone) is generated only after water has been introduced into the tank, the pollutant is introduced into the decomposition area before the decomposition promoting substance.

With respect to claim 29, there is no disclosure or suggestion in Salama that the decomposition process is stopped as presently claimed. In fact, there not one iota of disclosure in Salama regarding the order in which the decomposition is terminated. The Examiner's allegation that it would have been understood by one skilled in the art that the decomposition in Salama could be stopped in the presently claimed sequence is not sufficient to set forth a prima facie case of obviousness.

As a matter of law, in order to set forth a prima facie case of obviousness, the Examiner must at least show that there is motivation or suggestion to terminate the decomposition process in Salama as presently claimed. The motivation must flow from some teaching in the art that suggests the desirability or incentive to make the modification needed to arrive at the claimed invention. See In re Napier, 34 U.S.P.Q.2d 1782, 1784 (Fed. Cir. 1995). The fact that such a modification is possible or is within the skill in the art is not the required suggestion or motivation.

At most, the Examiner's statement in the Office Action indicates that there was knowledge in the art that the decomposition process in Salama could be stopped in the presently claimed sequence. This, however, is not a legally sufficient basis for concluding that the order of steps as presently claimed would have been obvious. See Ex Parte

Hiyamizu, 10 U.S.P.Q.2d (BNA) 1393 (B.P.A.I. 1988). Specifically, the Examiner's statement has no bearing on motivation, because it only concerns the issue of knowledge in the art, which, as a matter of law, cannot serve as the sole basis for modifying Salama. The Examiner must show more than mere knowledge in the art, i.e., knowledge is not motivation or suggestion. Accordingly, it is respectfully submitted that the presently claimed invention is clearly patentable over Salama.

Butters is directed to a contaminant treatment system and a method for a photocatalytic treatment of a substance. Butters teaches contacting pollutants with a photocatalytic slurry and using radiation to promote photocatalysis. The photocatalytic slurry is clearly not a gas. Therefore, Butters does not disclose or suggest contacting a gaseous pollutant with a gaseous decomposition promoting substance to conduct the decomposition. In fact, Butters specifically teaches transferring the pollutants into a liquid phase (see col. 9, line 39).

Further, with respect to claim 28, Butters does not disclose or suggest the sequence of steps as presently claimed. Fig. 8 clearly shows the sequence of steps in the process of Butters when UV radiation is used. Specifically, first, the gas containing pollutants is introduced into the decomposition chamber. Then, the slurry is introduced into the chamber. Subsequently, the pollutant and the slurry are irradiated (see col. 13, lines 3-35).

With respect to claim 29, like Salama, Butters is silent with respect to the sequence of the decomposition process termination steps. Applicants respectfully submit that Butters cannot render the presently claimed sequence of steps recited in claim 29

obvious for at least the same reasons as those discussed above with respect to Salama. Therefore, Butters cannot affect the patentability of the presently claimed invention.

In conclusion, Applicants respectfully submit that the cited references, whether considered separately or in any combination, do not disclose or suggest the combination of elements presently claimed. Wherefore, Applicants respectfully request that the outstanding objection and rejections be withdrawn and that the present case be passed to issue.

Applicants' undersigned attorney may be reached in our New York office by telephone at (212) 218-2100. All correspondence should continue to be directed to our address given below.

Respectfully submitted,

Attorney for Applicants

Registration No. 48,512

FITZPATRICK, CELLA, HARPER & SCINTO
30 Rockefeller Plaza
New York, New York 10112-3801
Facsimile: (212) 218-2200

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